

What is claimed is:

1. A kit for performing an inversion of a vermiform appendix of a patient, said appendix including interior walls defining a central lumen extending from a base which is connected
1.1 5 to a cecum of the patient toward a distal tip of said appendix, said kit comprising:

an elongated flexible element extending between a proximal end and a distal end, said elongated flexible element being adapted for passing through an inner channel of a colonoscope;

means disposed at said distal end of said elongated flexible element for anchoring said
1.1 10 distal end of said elongated flexible element to at least one of said interior walls when said distal end is disposed within said central lumen, such that pulling said elongated flexible element backward provides force for inverting said vermiform appendix into said cecum;
and

means for providing counterforce against said appendix base, wherein said means for
1.1 15 providing counterforce against said appendix base is adapted for being advanced over said elongated flexible element toward said appendix base and engaging with said appendix base.
2. A kit for performing an inversion of a vermiform appendix of a patient according to claim 1, wherein said elongated flexible element is an elongated flexible catheter.
- 1.1 20 3. A kit for performing an inversion of a vermiform appendix of a patient according to claim 1 further comprising a guiding means for guiding said distal end of said elongated flexible element into said central lumen of said appendix.
4. A kit for performing an inversion of a vermiform appendix of a patient according to claim 3, wherein said guiding means comprises a wire guide, and wherein said elongated
1.1 25 flexible element is a catheter disposed over said wire guide.

5. A kit for performing an inversion of a vermiform appendix of a patient according to claim 1, wherein said means disposed at said distal end of said elongated flexible element for anchoring said distal end of said elongated flexible element to at least one of said interior walls when said distal end is disposed within said central lumen comprises at least one balloon attached to said distal end of said elongated flexible element, and wherein said elongated flexible element defines a first inner channel in connection with an interior area of said at least one balloon for inflating and deflating said at least one balloon.
- 1.1 5
6. A kit for performing an inversion of a vermiform appendix of a patient according to claim 5, wherein said at least one balloon has an outer surface carrying a skid resistant structure.
- 1.1 10
- 7 A kit for performing an inversion of a vermiform appendix of a patient according to claim 5, wherein said elongated flexible element defines a second inner channel, said second inner channel having at least one distal opening at the distal end of the elongated element.
- 1.1 15
- 8 A kit for performing an inversion of a vermiform appendix of a patient according to claim 5, wherein said at least one balloon comprises a plurality of balloons connected by said first inner channel, and wherein said elongated flexible element defines a second inner channel which includes at least one opening located between any two adjacent balloons.
- 9 A kit for performing an inversion of a vermiform appendix of a patient according to claim 1 further comprising a colonoscope defining an inner channel for receiving said elongated flexible element.
- 1.1 20
- 10 A kit for performing an inversion of a vermiform appendix of a patient according to claim 1 further comprising a catheter being positionable within an inner channel of a colonoscope for irrigating said central lumen of said appendix.
- 1.1 25
- 11 A kit for performing an inversion of a vermiform appendix of a patient according to

claim 1 wherein said means for providing counterforce against said appendix base comprises an elongated flexible tubular element extending between a proximal end and a distal end, said tubular element defining at least one inner channel, said at least one inner channel comprising a first inner channel which is adapted for receiving a colonoscope.

- 1.1 5 12 A kit for performing an inversion of a vermiform appendix of a patient according to claim 11, wherein said tubular element further comprises a circular seal disposed within said first inner channel at or near said proximal end of said tubular element, and wherein when a colonoscope is disposed within said first inner channel, said circular seal engages with said colonoscope and seals a region between said colonoscope and said tubular
- 1.1 10 element.
- 13 A kit for performing an inversion of a vermiform appendix of a patient according to claim 11, wherein said first inner channel is coated with a lubricious material.
- 14 A kit for performing an inversion of a vermiform appendix of a patient according to claim 1 further comprising a ligating means being positionable near said appendix base for
- 1.1 15 ligating said appendix when said appendix is disposed within said cecum.
- 15 A kit for performing an inversion of a vermiform appendix of a patient according to claim 14, wherein said ligating means comprises a loop at a distal end.
- 16 A kit for performing an inversion of a vermiform appendix of a patient according to claim 15, wherein said loop is detachable.
- 1.1 20 17 A kit for performing an inversion of a vermiform appendix of a patient according to claim 1 further comprising a cutting device for enlarging an orifice of said central lumen of said appendix.
- 18 A kit for performing an inversion of a vermiform appendix of a patient according to claim 17, wherein said cutting device comprises a sphincterotome.
- 1.1 25 19 A device for performing an inversion of a vermiform appendix of a patient according

to claim 17, wherein said cutting device comprises a needle knife.

20 A kit for performing an inversion of a vermiform appendix of a patient according to claim 1 further comprising means for cutting said appendix when said appendix is disposed within said cecum.

1.1 5 21 A kit for performing an inversion of a vermiform appendix of a patient according to claim 20, wherein said cutting means comprises an elongated wire forming a wire loop at a distal end, said wire being electrically conductive.

22 A kit for performing an inversion of a vermiform appendix of a patient according to claim 1, wherein said means disposed at said distal end of said elongated flexible element
1.1 10 for anchoring said distal end of said elongated flexible element to at least one of said interior walls when said distal end is disposed within said central lumen comprises at least one flap disposed at said distal end, said at least one flap being adjustable between a closed position and an opened position.

23 A kit for performing an inversion of a vermiform appendix of a patient according to
1.1 15 claim 22, wherein said elongated flexible element comprises a catheter defining a central lumen and an inner elongated element slidably received within said central lumen, said inner elongated element defining at least one depression, and wherein said at least one flap comprises a knob extending into said central lumen, said depression engaging with said knob, wherein said at least one flap are adjusted between said closed position and said
1.1 20 opened position by operating said inner elongated element.

24 A kit for performing an inversion of a vermiform appendix of a patient according to claim 1, wherein said means for providing counterforce against said appendix base comprises a colonoscope, said colonoscope having a distal end being adapted for providing counterforce against said appendix.

1.1 25 25 A kit for performing an inversion of a vermiform appendix of a patient according to

claim 1, wherein said means for providing counterforce against said appendix base comprises a ring, wherein said ring is adapted for being advanced over said elongated flexible element toward said appendix base and engaging with said appendix base.

1.1 5 26 A kit for performing removal of a vermiform appendix from a patient, said appendix including interior walls defining a central lumen extending from a base which is connected to a cecum of the patient toward a distal tip of said appendix, said kit comprising:

A. an elongated flexible element extending between a proximal end and a distal end, said elongated flexible element being adapted for passing through an inner channel of a colonoscope;

1.1 10 B. means disposed at said distal end of said elongated flexible element for anchoring said distal end to at least one of said interior walls when said distal end is disposed within said central lumen; and

1.1 15 C. a tubular element extending between a proximal end and a distal end thereof, said tubular element defining at least one inner channel, wherein said at least one inner channel comprises a first inner channel being adapted for accommodating a colonoscope.

27 A kit for performing removal of a vermiform appendix from a patient according to claim 26 further comprising means being positionable at the distal end of said tubular element for ligating said appendix when said appendix is disposed within said cecum of the patient.

1.1 20 28 A kit for performing removal of a vermiform appendix from a patient according to claim 27, wherein said means for ligating said appendix comprises a loop at a distal end.

29 A kit for performing removal of a vermiform appendix from a patient according to claim 28, wherein said tubular element further defines a second inner channel for receiving said means for ligating said appendix .

1.1 25 30 A kit for performing removal of a vermiform appendix from a patient according to

claim 26, wherein said means disposed at said distal end of said elongated flexible element for anchoring said distal end to said interior walls when said distal end is disposed within said central lumen comprises at least one adjustable flap mounted on said distal end of said elongated flexible element.

1.1 5 31 A kit for performing removal of a vermiform appendix from a patient according to claim 26, wherein said means disposed at said distal end of said elongated flexible element for anchoring said distal end of said elongated flexible element to at least one of said interior walls when said distal end is disposed within said central lumen comprises at least one balloon attached to said distal end of said elongated flexible element, and wherein said
1.1 10 elongated flexible element defines a first inner channel in connection with an interior area of said at least one balloon for inflating and deflating said at least one balloon.

32 A kit for performing removal of a vermiform appendix from a patient according to claim 31, wherein said at least one balloon comprises an outer surface carrying a skid resistant structure.

1.1 15 33 A kit for performing removal of a vermiform appendix from a patient according to claim 26 further comprising means being positionable at said appendix base for cutting said appendix.

34 A kit for performing removal of a vermiform appendix from a patient according to claim 33, wherein said means for cutting said appendix comprises an elongated wire
1.1 20 forming a wire loop at a distal end, and wherein said elongated wire is electrically conductive.

35 A kit for performing removal of a vermiform appendix from a patient according to claim 26, wherein said at least one inner channel comprises a second inner channel having a distal opening at or near the distal end of the tubular element for receiving a cutting
1.1 25 device for enlarging an orifice of the central lumen of the appendix, and wherein said tubular element comprises a knob disposed at or near the distal opening of the second inner

channel for adjusting the cutting device.

36 A kit for performing removal of a vermiform appendix from a patient, said appendix including interior walls defining a central lumen extending from a base which is connected to a cecum of the patient toward a distal tip, said kit comprising:

1.1 5 A. an elongated flexible element extending between a proximal end and a distal end, said elongated flexible element being adapted to be received within an inner channel of a colonoscope, said distal end being dimensioned to fit within said central lumen;

 B. means attached to said distal end of said elongated flexible element for anchoring said distal end to said interior walls when said distal end is disposed within said
1.1 10 central lumen;

 C. a tubular element extending between a proximal end and a distal end thereof, said tubular element defining an inner channel for accommodating a colonoscope, wherein said distal end of said tubular element is dimensioned to interferingly engage with said appendix base to provide counterforce against said appendix base during an inversion of
1.1 15 said appendix; and

 D. means being positionable at said distal end of said tubular element for ligating said appendix when said appendix is disposed within said cecum of the patient.

37 A kit for performing removal of a vermiform appendix from a patient according to claim 36, wherein said means being positionable at said distal end of said tubular element
1.1 20 for ligating said appendix when said appendix is disposed within said cecum of the patient comprises a loop at a distal end of said means for ligating said appendix.

38 A kit for performing removal of a vermiform appendix from a patient according to claim 36 further comprising cutting means being positionable at said appendix base for cutting said appendix.

1.1 25 39 A kit for performing removal of a vermiform appendix from a patient according to

claim 38, wherein said cutting means comprises an elongated wire forming a wire loop at a distal end, and wherein said wire is electrically conductive.

40 A kit for performing removal of a vermiform appendix from a patient according to claim 36 further comprising a colonoscope, wherein said colonoscope defines an inner
1.1 5 channel for receiving said elongated flexible element, and wherein said colonoscope is adapted for passing through the inner channel of the tubular element.

41 A method for performing an inversion of a vermiform appendix of a patient, said appendix including interior walls defining a central lumen extending from a base which is connected to a cecum of the patient toward a distal tip, said method comprising:

1.1 10 inserting a distal end of an elongated flexible element into said central lumen of said appendix;

anchoring the distal end of the elongated flexible element to at least one of said interior walls of said central lumen of said appendix; and

pulling said distal end of said elongated flexible element toward said cecum,
1.1 15 wherein said distal end of said elongated flexible element draws said appendix into said cecum.

42 A method for performing an inversion of a vermiform appendix of a patient according to claim 41 further comprising providing a counterforce to said appendix base.

43 A method for performing an inversion of a vermiform appendix of a patient according
1.1 20 to claim 41 further comprising irrigating said central lumen of said appendix before said distal end of said elongated flexible element is inserted into the central lumen of the appendix.

44 A method for performing an inversion of a vermiform appendix of a patient according to claim 41 wherein the step of inserting a distal end of an elongated flexible element into
1.1 25 said central lumen of said appendix comprises:

inserting an introducing means into said central lumen of said appendix; and
guiding a distal end of an elongated flexible element into said central lumen of
said appendix over said introducing means.

45 A method for performing an inversion of a vermiform appendix of a patient according
1.1 5 to claim 41, wherein said elongated flexible element comprises:

means disposed at said distal end of said elongated flexible element for
anchoring said distal end of said elongated flexible element to at least one of said
interior walls when said distal end is disposed within said central lumen.

46 A method for performing an inversion of a vermiform appendix of a patient according
1.1 10 to claim 41 further comprising ligating said appendix after said appendix is drawn into said
cecum.

47 A method for performing an inversion of a vermiform appendix of a patient according
to claim 46 further comprising cutting said appendix after said appendix is ligated.

48 A method for performing an inversion of a vermiform appendix of a patient according
1.1 15 to claim 41 further comprising cutting said appendix after said appendix is drawn into said
cecum.

49 A method for performing an inversion of a vermiform appendix of a patient according
to claim 41 further comprising placing a colonoscope into said cecum before said distal
end of said elongated flexible element is inserted into said central lumen of said appendix.

1.1 20 50 A method for performing removal of a vermiform appendix from a patient, said
appendix including interior walls defining a central lumen extending from a base which is
connected to a cecum of the patient toward a distal tip, said method comprising:

guiding a distal end of an elongated flexible element into the central lumen of the
appendix, wherein said elongated flexible element comprises means attached to said

distal end of said elongated flexible element for anchoring said distal end of said elongated flexible element to at least one of said interior walls of said central lumen when said distal end of said elongated flexible element is disposed within said central lumen;

1.1 5 anchoring said distal end of said elongated flexible element to at least one of said interior walls of said central lumen by said means for anchoring said distal end of said elongated flexible element to at least one of said interior walls of said central lumen;

 advancing a distal end of a tubular element toward said appendix base to provide counterforce against said appendix base; and

1.1 10 pulling said distal end of said elongated flexible element toward said cecum, wherein said elongated flexible element draws said appendix into said cecum.

51 A method for performing removal of a vermiform appendix from a patient according to claim 50 further comprising ligating said appendix after said appendix is drawn into said cecum.

1.1 15 52 A method for performing removal of a vermiform appendix from a patient according to claim 51 further comprising cutting said appendix after said appendix is ligated.

53 A method for performing removal of a vermiform appendix from a patient according to claim 50 further comprising cutting said appendix after said appendix is drawn into said cecum.

1.1 20 54 A method for performing an inversion of a vermiform appendix of a patient according to claim 50 further comprising irrigating said central lumen of said vermiform appendix before said distal end of said elongated flexible element is guided into said central lumen.

55 A method for performing removal of a vermiform appendix from a patient according to claim 50, wherein said means for anchoring said distal end of said elongated flexible element to at least one of said interior walls of said central lumen comprises at least one balloon

1.1 25

attached to said distal end of said elongated flexible element.

1.1 5 56 A method for performing removal of a vermiform appendix from a patient according to claim 50, wherein said means for anchoring said distal end of said elongated flexible element to at least one of said interior walls of said central lumen comprises at least one adjustable flap attached to said distal end of said elongated flexible element.

57 A method for performing removal of a vermiform appendix from a patient according to claim 50 further comprising placing a colonoscope into the cecum before said distal end of said elongated flexible element is guided into said central lumen.

1.1 10 58 A method for performing removal of a vermiform appendix from a patient, said appendix including interior walls defining a central lumen extending from a base which is connected to a cecum of the patient toward a distal tip, said method comprising:

placing a colonoscope into said cecum of the patient;

guiding a distal end of an elongated flexible element into the central lumen of the appendix;

1.1 15 anchoring said distal end of said elongated flexible element to at least one of said interior walls of said central lumen;

providing counterforce against said appendix base;

pulling said elongated flexible element backward into said cecum, wherein said elongated element draws said appendix into said cecum; and

1.1 20 ligating said appendix.

59 A method for performing removal of a vermiform appendix from a patient according to claim 58 further comprising cutting said appendix after ligating said appendix.

60 A method for performing an inversion of a vermiform appendix of a patient according to claim 58 further comprising irrigating said central lumen of said vermiform appendix.

before said distal end of said elongated flexible element is guided into said central lumen.

61 A method for performing imaging of a vermiform appendix of a patient, said method comprising:

1.1 5 placing a radiologically effective amount of contrast media into the vermiform appendix; and

inspecting the vermiform appendix by radiography.

62 A method for performing imaging of a vermiform appendix of a patient according to claim 61 further comprising irrigating said vermiform appendix before said radiologically effective amount of contrast media is placed into the vermiform appendix.

1.1 10 63 A method for performing imaging of a vermiform appendix of a patient according to claim 61 further comprising placing a colonoscope into a cecum of the patient before said radiologically effective amount of contrast media is placed into the vermiform appendix..